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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,413	01/31/2002	Yasushi Fukunaga	52201-0614	4640

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EXAMINER

HOFFMANN, JOHN M

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,413

Applicant(s)

FUKUNAGA ET AL.

Examiner

John Hoffmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims use the term "carbon-made". It is unclear if this means it comprises carbon, consists of carbon, or something else.

The claims indicates the d:D ratio is 1.02:1.5. It appears that this is not the intended meaning, rather that value of d/D is within the range of 1.02:1.5. It is unclear if

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the claims would cover what they actually say, or if it covers what was intended what they say.

Claim 4, there is no antecedent basis for "the clearance".

Claims 5 and 7: there is no antecedent basis for "the ratio" or for "the inner diameter". If the hole is square it has no diameter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkery 5917109 in view of Klop 4309201 and Briere 4400190, and optionally in view of Blankenship 5059229.

Berkey discloses the stretching of a preform in a furnace, see figure 9 and col. 4, lines 4-5. However, Berkey just shows a graphical representation of the heating element – none of the claimed structure is disclosed. However it is well known that

graphite-based furnaces are well known for stretching fiber preforms: see Klop, col. 1, lines 21-27 for evidence for such. It would have been obvious to use a graphite furnace because such has high thermal shock resistance and is "cheap" and easy to work.

Briere teaches a superior graphite furnace (see col. 1, lines 37—68) it would have been obvious to use the Briere teachings to control the gap between the preform and the tube so as to better control the diameter and to reduce the energy costs. Applicant has substantially the same problem as Briere: the gases in the furnace influence the heating of the preform, and thus the geometrical dimensions of the final product. It would have been obvious to perform routine experimentation so as to determine the optimal gap for drawing of the preform. It is noted that Applicant's ellipticity is just another form of Briere's problem, because a elliptical preform will have two different diameters. It would not have what Briere teaches can be achieved: uniform diameters of +/- 1% tolerance.

Blankenship can be relied upon to show one can use a conventional draw furnace to draw preform into a rod (col. 7, lines 39-40).

Claims 2, 4: as indicated above, it would have been obvious to perform routine experimentation to determine the optimal gap – and thus the ratio.

Claim 3: it would have been obvious to make the preform as large or as small as desired depending upon how much fiber one wanted to create.

Claim 6 is clearly met.

Claims 5 and 7: A tube cannot have an OD:ID ratio of 2:5. It has to be greater than 1. An outer diameter cannot be less than the inner diameter. Berkey meets the claim in as much as the instant invention does. Alternatively the claim require that it set from 2:5 – but fails to set what the other end point is. For example: it could be from 2:5 to 1000:1, alternatively from 2:5 to 1:1000. Regardless of what the Berkey ratio is, one could have another endpoint so that the Berkey ratio is between 2:5 and the other endpoint.

Claim 8 is clearly met.

Claims 9-16 are met for the same reasons as 1-8.

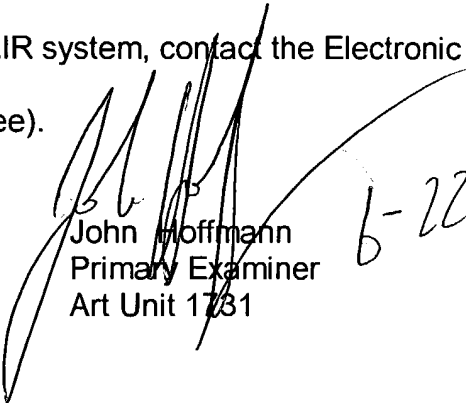
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Uhm is cited as teaching it is known to maintain a small gap to prevent contamination, Nagayama is cited as teaching a 1.35 ratio, Suda is cited as teaching a graphite furnace diameter:preform diameter of 1.23. Harding, Bair, Yokokawa, Saito, and Suzuki are cited as being directed to the disclosed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John Hoffmann
Primary Examiner
Art Unit 1731

6-22-04

jmh